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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

PROGRAM Autobiographies of Bugs and Rodents RELEASE Tues., Feb. 1.

ANNOUNCEMENT: Tomorrow's groundhog day. Station_____ is anticipating that event to-night in broadcasting this special groundhog story as the regular Tuesday evening feature of Uncle Sam's bugs and rodents radio program. Most folks know the groundhog as an amateur weather prophet with a low accuracy record. Many don't know that the animal's a serious farm pest as well. But, on with the story.....

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Here's news, folks: --

Mrs. Jack Groundhog of the well-known Groundhog family of the Corn Belt and the Great Open Spaces insists she won't show up tomorrow to follow her traditional yearly practice of forecasting the weather for the next 6 weeks.

"Our coming out party has been postponed", she told me.

She won't have a thing to do with reporters, either. "I don't want them in the house", she piped. "They're always misunderstanding me. And, as for those men from the weather office! . . . Well, they never agree with my predictions."

Mrs. Groundhog told me that she gussed the weather will have to worry along without her this year.

The only reason she'd admit me to her luxurious country home down in South Meadows is because I'm a special friend of the family. I've known the Groundhogs for years.

Mrs. Groundhog's decision to stay in retirement tomorrow came as a distinct shock to me. For many yaars, her family have made it an annual practice to come out on February2d. I reminded her of that.

"But Mrs. Groundhog", said I, "don't you realize that your public is waiting for you to come out tomorrow? Don't you know that hundreds of thousands of people await your forecast with bated breath?"

"Well, then they'll have to bate their breath until they pass out", she replied impatiently. "I'm a woman of some temperament and my dear public will just have to wait."

I looked closely at Mrs. Groundhog, trying to read what was going on in her brain behind those beady, black eyes. I must confess that I couldn't see her reasons in her eyes. So I decided I'd talk the matter over with her further.

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"Now tell me, my dear Mrs. Groundhog", said I, "why you've made this sudden decision to deny your public presence tomorrow".

"Well, I've been reading the papers", she replied.

"So has Will Rogers", I reminded her gently.

"What has that to do with it? I've been reading the papers and they say there's absolutely nothing to this Groundhog Weather Myth. They say that two years ago I made a forecast of foul weather and Spring came on right after. And the year before I did the same thing --- and the year before. In fact they say that as a weather prophet, I'm an excellent home-run hitter. I don't exactly know what that means, but I'm sure it's something sarcastic."

"But you must be patient", I said. "We are living in a doubtful age, you know."

"Yes, I know. But I don't like the sound of the thing", she told me as she went to the front door and sniffed the air. "Sh-h-h-h-h! There's somebody coming".

She peered slyly out, then came back to me. "Please have a seat", she said. "I should have asked you to sit down before. It's only a dog out there. He'll never find us."

"Come, come, Mrs. Groundhog", said I. "A woman of your social standing surely is not going to admit that she's postponing her annual coming out party merely because the newspapers have said one or two things in a joking way about her ability to forecast the weather for the next 6 weeks or so!"

"That's not all", said this South Fields social leader. "I thought I'd better lay low till this trouble blows over".

"Farmers after you again?" I asked.

"Sure", she said. "Haven't you heard?"

"Come to think of it, I have", said I. "And I'm not so sure that I blame them, either."

"Well, let's let that pass", and Mrs. Groundhog waved a paw. "I wish you'd tell me what they have against me and what they're saying about me, anyhow."

"All right", said I. "They say this. After a winter of hibernation in their underground den, groundhogs are ready to forage about for food. As they do not store food in the burrow, they get pretty hungry about springtime. The groundhog is a vegetarian and prefers legumes, such as soybeans and clover, but also relishes the bark of trees, especially fruit trees, which it often kills entirely. During the spring months, a family of 3 to 7 groundhogs will be raised by each overwintering female, and during the summer, many acres of soybeans, clover, and grain will be destroyed. Groundhogs are responsible for breaks in

levees and the banks of irrigation ditches. Groundhog holes in fields are an annoyance to the farmer and sometimes cause a few broken legs to stock running over the undermined ground....

"It's not necessary for farmers to endure these losses to stock, crops, and property, they say", I continued. "The increase of this pest has been rapid the past few years and at the present time a large percentage of farms are infested. The increase this year will mean greater numbers and greater losses to the farmers. Control methods should be undertaken as early as possible to get the unborn young and to prevent the destruction of growing crops. The methods of control recommended are simple, cheap, and effective."

"What is the method?" Mrs. Groundhog broke in.

"Here's what they recommend", said I. "First, find the burrow. You can tell it from the burrows of other animals because it has a number of fresh, small balls of dirt pushed out of the hole and lying near the entrance. The mound is usually quite round. Vegetation near the groundhog mounds is eaten down short. You will also find a number of well-trodden paths leading from burrow to burrow.

"Second, poison the groundhogs inside the burrow. Calcium cyanide, a poison which generates hy-dro-cy-an-ic acid gas when it comes into contact with air, is generally used. This poison can be used by any mature person without danger, if he uses care!

"In using the cyanide, follow these directions: Use a long-handled spoon, -- take a heaping tablespoonful of the calcium cyanide, -- reach into the burrow at arm's length, turn the spoon over and deposit the cyanide in a pile in the burrow. Don't scatter it. Then cut a square of sod, lay the flat side against the burrow opening, and throw a few shovels of dirt over the sod. Treat all holes this way. A few hours' work will usually be sufficient to rid a whole farm of groundhogs when this method is used.

"The gas generated in the burrow kills the animals. Covering the entrance with the sod keeps the gas in and the groundhogs too. Check your work a week after the treatment. Do the work over again when you find some holes that have been opened.

"In using the cyanide, BE CAREFUL! Don't leave the can open. Keep it covered except when you're taking out a spoonful of the chemical. Never keep the cyanide in a glass jar and don't keep the container in a house or any building housing stock.

"Calcium cyanide should be used only in burrows occupied by groundhogs during April, May, June, and July. The animals aren't so active during other months."

"So that's what they say!" squealed Mrs. Groundhog. "Well, do you blame me for sticking pretty close to home? Anyhow------"

"Well", said I, "what do you expect of folks when you destroy their crops, burrow through their levees and cause floods, and do a lot of other damage?"

"Don't interrupt", she commanded haughtily. "Anyhow, I expect to have a hungry family of young ones to take care of pretty soon now. They'll be too young to take chances with, and so ---------"

Good night.

---ooOoo---

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

PROGRAM Autobiographies of Insects and Rodents RELEASE Tues. Feb. 8.

NOT FOR PUBLICATION

ANNOUNCEMENT: Station_____, broadcasting Uncle Sam's regular Tuesday evening autobiography of interesting insects and rodents. Spring care of bees is the feature for tonight. The Bee Man is the speaker.

* * * * * * * *

"When one neighbor raises flowers,
And another, chickens,
Oft they fight like irate powers,
Daily raise the dickens.

Neighbors ought to strive to please,
Folks should not be scrappy.
Better make it flowers and bees,
And be truly happy."

"There's more than good, fatherly advice in that verse -- as almost a million bee keepers in the United States know already. And there's more to the business of bee keeping than merely striving to please the neighbors. Keeping bees is an important business. The United States exported more than 6 and one-half million pounds of honey during the first 11 months of 1926. And I helped furnish some of that honey myself".....

My friend, the Bee Man, was speaking. It was his way of introducing the subject of spring care of bees which I had asked him about. I'm a begirner, you see. Haven't even got used to bee stings yet. So I had gone to him for expert advice on a subject that's as broad as the sea.

"If you want to make a success raising bees", he continued -- admonishing me with pointed forefinger -- "you must become so interested in bees that you think bees --- talk bees-- dream bees-- and never tire of their study. You must anticipate their wants and do the right thing at the right time. Bee keeping demands care and experience. Those who procrastinate and neglect work that needs to be done, will do well to let bees alone -- unless they hope, by studying bees' good habits, to reform their own bad ones".

"Why are so many women interested in the bee business?" I broke in.

"For several reasons", he told me. "If a woman likes good housekeeping, then the bee is an ideal model. If she likes a woman of business, then the bee is a shining light. If she is interested in the care of children, the bee nurse is an example of perfection. If she believes in the political rights of women, she will find the highest feminine political wisdom in the constitution of the bee commune.

"But anyone who takes up bee keeping as a hobby or as an avocation, should keep only a few colonies -- not more than 2 or 3 -- so that his pleasure won't become a burden. If you are keeping bees for your health, let the fellow who is raising them on a commercial scale do the worrying about the complicated problems of large-scale bee keeping."

I only have 3 or 4 colonies myself, but I get a lot of fun out of tending them -- and plenty of honey myself. Somehow, though, I have a feeling that I'm not giving the bees the best of care. So I called the Bee Man in to look things over and advise me what to do. We were examining the condition of one of my hives.

"How does it look to you?" I asked. "Do you think those bees are in good condition?"

"Pretty fair," he answered. "The condition of a colony of bees in the early spring depends mainly on the care given the bees the preceding autumn and winter. If the colony has wintered well and has a good prolific queen, preferably young, the chances are that it will become strong in time to store a good surplus when the honey flow comes."

"How early -- and for what purpose -- should a man examine his colonies in the spring?"

"The time for the examination depends on how the bees have been wintered. If the bees have been properly prepared for winter, there will be plenty of honey in the hive for food during spring, and consequently, no spring feeding will be required. There will also be sufficient bees relatively young to cause a rapid building up in population provided a vigorous queen was introduced in the preceding season. If you winter your bees in one story, however, they should be examined as early in the spring as there is good flying weather. The purpose is to find out if the queen is present in the hive, -- until the bees can get nectar from the spring flowers. Certain beekeepers recommend feeding a thin sirup in spring to stimulate brood-rearing. The final purpose of the spring examination is to clip the wings of the queen, if it is desired to do so."

"What do you clip the queen's wings for?" I asked.

"So she won't be able to fly when a swarm issues", answered the Bee Man. "If the queen can't fly, she will be found crawling around in front of the hive. You can then put her in a small cage and hang it up in a basket near the place where the swarm is flying, or getting ready to cluster. The swarm will then settle on the basket and can easily be hived where you want it. Or else you may allow the swarm to return to the hive, as it won't leave without the queen. In this case all queencells must be removed."

"Should I clip both wings?" was my next question.

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"But anyone who [illegible] keeping as a [illegible] hobbyist should keep only a few colonies -- [illegible] more than [illegible] -- [illegible] more won't become a burden. If you are [illegible] been for you [illegible], but the fellow who is raising them on a commercial scale is the worrying about the complicated problems of large-scale bee keeping."

I only have [illegible] colonies myself, but I get a lot [illegible] keeping them -- and plenty of honey myself. Somehow, though, I have [illegible] that I'm not giving the bees the [illegible] care. But I should be [illegible] to look things over and advise me what to do [illegible] the condition of one of my hives.

"How does it look to you?" I asked. "Do you think these bees are in good condition?"

"Pretty fair," he answered. "The condition of a colony of bees [illegible] early spring depends mainly on the care given the bees during the preceding winter. If the colony has wintered well and has a good probability of [illegible] early young, the chances are that it will become strong in time [illegible] surplus from its honey flow comes."

"Then again -- and for that purpose -- should a new queen be [illegible] in the spring?"

"The time for the examination depends on how the bees have [illegible]. If the bees have been prepared [illegible] for winter, there will be [illegible] in the hive for food during spring, and [illegible] so [illegible] will be required. There will also be [illegible] to cause a rapid building up in population [illegible] introduced in the preceding season. If you winter your bees in [illegible] they should be examined as early in the spring [illegible] weather. The purpose is to find out if the queen is [illegible] -- and the bees can get nectar from the spring [illegible] pure recommend feeding a thin sirup in spring to stimulate [illegible] the final purpose of the spring examination is to clip the wings of the queen. It is desired to do so."

"How do you clip the queen's wings for?" I asked.

"She won't be able to fly when a swarm forms. [illegible]

"If the queen really flies, she will be found crawling around in front of hive. You can then put her in a small cage and [illegible] place where the swarm is forming, or putting [illegible] the queen will then settle on the branch and [illegible] Or else you may allow the swarm to return to the hive [illegible] the queen. In this case all queencells must be removed.

"Should I [illegible] with imported [illegible] queens?

"There's no harm in it", my friend told me. "But the queen is able to fly a little when you clip both wings."

"How should the clipping be done?" I wanted to know.

"Take the queen up from the comb by her wings, with the right hand. Then grasp her legs gently with the fingers of the left hand. Then clip the wings of one side with small scissors held in the right hand. The larger wing should be clipped just enough to include the tip of the shorter wing."

Then the Bee Man tapped me on the arm, to caution me -------

"Bees should never be handled in the early Spring more than necessary," he said. "When you open a hive in cool weather, it merely wastes heat and may even kill the brood by chilling. Keep the hive as warm as possible in early spring. That's a great aid to brood rearing. It's a good practice to wrap unprotected hives in black tar paper in the Spring. This conserves the heat of the colony. Put this paper on as soon as you find -- by an early examination -- that the colony is in good condition. Don't put the black wrapping on in the Winter, however. It sometimes induces brood rearing too early and wastes the strength of the bees.

"Another good Spring practice in certain seasons and localities," continued the Bee Man, "is to feed the bees a little thin sugar sirup in the early part of the season. This produces about the same effect as a light honey flow in stimulating brood-rearing. This type of feeding is not to be confused with feeding for stores. It is the best practice to furnish the colonies with enough stores in the Fall to last well into the Spring. But careful stimulating feeding for brood-rearing may prove of advantage if sufficient nectar from natural sources is not being carried into the hive. Feed the colonies late in the day, so that the bees won't fly as a result of it."

"How early will brood rearing start in the Spring?" I wanted to know.

This depends somewhat on how well the bees have wintered. If they have had poor stores and lack protection -- which cause disturbances of their normal processes -- brood rearing may begin most any time even during the Winter. If the wintering has been normal, brood rearing will usually begin any time from early in March on down to April or May, depending on the climate and location. Brood rearing doesn't make much progress until the bees begin to fly and gather early pollen".

"I took advantage of a pause to put in another question that had bothered me. "What's this 'Spring Dwindling' I've heard so much about?"

"It's that mysterious shrinkage -- or disappearance-of the bees in a colony in early Spring, after they have come through Winter with a fair number of bees in the hive. 'Dwindling' begins as soon as Spring work gets well started in the hive."

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UNITED STATES DEPARTMENT OF AGRICULTURE
Radio Service
OFFICE OF INFORMATION

PROGRAM **Autobiographies of Bugs and Rodents.** RELEASE Tues. Feb. 15.

(NOT FOR PUBLICATION)

ANNOUNCEMENT: Station _____, broadcasting Uncle Sam's regular Tuesday evening chat on bugs and rodents. The rat, that dangerous four-legged pirate, is the villain in tonight's piece. Sure-fire means of control, as outlined by the Biological Survey, U. S. Department of Agriculture, are featured for farmer and townsman.

---ooOoo---

"The queer thing about the rat's annual destruction in the United States", began Bourne, the expert, "is not the extent of the damage this infamous pirate does, but that so many people put up with this filthy and destructive animal."

My friend, Smith, and I came to attention. Smith's from town. He's in the warehouse business. He and Bourne were visiting me, on the farm.

"But look here, Bourne", Smith protested, "rats are everywhere. They increase faster than almost anything I know about. They tell me that a pair of rats, breeding without interruption and without deaths, would be increased to more than 350 million individuals by the end of 3 years!

"All very true", Bourne replied. "But that breeding can be stopped -- and rat damage can be stopped! Correct, thorough measures -- when practiced by whole communities -- will make the rat nearly as scarce as the dodo bird. The rat is the worst animal pest in the world. It's a disgrace to civilization. From its home among the filth of the earth it sneaks to our dwellings and storerooms to pollute and destroy our food. It carries bubonic plague and many other diseases fatal to man. It has been responsible for more untimely deaths among human beings than all the wars of history. Every year, rats and mice destroy crops and other property valued at over 200 million dollars in the United States alone. This destruction is equal to the gross earnings of an army of 200 thousand men. This pirate must be -- and can be -- destroyed!"

CLAP-CLAP-CLAP-CLAP! Smith and I applauded softly.

Then Bourne continued.

"I remember back in 1914", he began calmly. "Public health men were down in New Orleans fighting the bubonic plague -- a rat disease -- that had broken out in the city. Now, if you men know anything about the plague, you know that it's one of the most terrific diseases that afflict mankind. Well, they found hundreds of houses with their floors directly on the ground. Plague-infested rats died under the floors of these houses. Rat fleas, full of the germ-laden blood of the rat, attached themselves to human beings living above. Now it's a quite practical thing to elevate such houses on smooth posts so that the floors will be about 18 inches from the ground. That makes them rat-proof. That was done -- and

no case of rat or other rodent plague has occurred in those houses since. I mention this to show you what can be done when there's informed community action on a community problem".

Smith and I listened with respect and interest. Bourne's a man who has seen life. He's traveled from California to Maine and from Florida to Washington studying pests and means of their eradication.

"For centuries, the world has been fighting rats with little organization", Bourne went on, "and at the same time, the world has been feeding rats and building fortresses of concealment for them. If we are to fight rats on equal terms, we must deny them food and hiding places. We must organize and unite to rid communities of these pests. The time to begin is now".

I broke in at this point. "And what Smith and I want to know, Bourne", I said, "is exactly how we can rid our own premises of rats".

"That's what I was getting around to", Bourne told us. "First of all, remember that natural enemies of the rat, such as cats, dogs, and birds, cannot be relied on to rid a farm of rats. They'll help. The experts in the Biological Survey of the U. S. Department of Agriculture have found that a few simple measures practiced vigorously and repeatedly will rid a farm or a community of the rat peril. Rats are hard to exterminate. It's a case of man having to match his wits against the highly developed instincts of a cunning four-legged pirate.

"Our best weapon for this warfare is Barium Carbonate. For everyday use on the farm, in the home, in warehouses, stores, offices, and such places, barium carbonate is efficient, and deadly to rats. It's cheap and without taste and smell. Although barium carbonate is less toxic than phosphorus, strychnine, and arsenic, use care nevertheless because it's a poison. Its action on rats is slow and for this reason the sick rats have plenty of opportunity to return to their burrows in the ground where their decaying bodies don't leave a bad odor.

"How do you use it?" asked Smith.

"Follow closely", cautioned Bourne. "And I'll outline the system briefly, but exactly. First, prepare the bait. Barium carbonate may be fed in the form of a dough, composed of 4 parts meal or bread and 1 part of the poison. In fact, that proportion, 1 part poison to 4 parts bait, is good for almost any kind of bait you use. The powdered barium carbonate should be mixed well into the bait. Baits attractive to rats are chopped lean meat, sausage, fish, liver, bacon, egg, apple, tomato, melon rind, mashed sweet potato, banana, cheese, cereals, peanut butter, and sweet corn".

"How much bait do you put in a place?" I wanted to know.

"Put a teaspoonful of prepared bait in a place -- or 2 teaspoonfuls, if the bait is liquid. The bait should be laid at intervals of 10 to 20 feet in places infested by rats. Use 2 or 3 different baits at a time, giving the rats a choice of meat, cereal, vegetable, and so forth. Use a large quantity of bait the first night, thus giving many rats an opportunity to feed on it. Try to make

a big killing. The next morning, all bait that's not eaten should be gathered up and burned or buried. Get rid of the dead rats. Three weeks after the first baiting, if rats are still seen around the premises, repeat the process.

"You should get the neighbors in on the killing. Cooperation from them is desirable. Make a community affair of it. Immediately after poisoning, all openings affording entrance to rats should be stopped up. Remove all rubbish heaps -- keep garbage cans tightly closed -- and make buildings rat-proof as far as possible."

"You can't scatter that bait broadcast in chicken houses and yards", said Smith, "or the chickens would eat it".

"I'm glad you mentioned that", said Bourne. "A special procedure is required in the henhouse. Put the bait -- preferably in a meal or liquid form in some place where the rats but not the chickens can get at it. The bait, when in meal or liquid form can not be carried from such cover.

"If the rats die behind walls or under floors, chloride of zinc is good to get rid of the odor. A strong-smelling substance such as oil of cloves, carbolic acid, or oil of tar can be added if desired."

"Say", said Smith with enthusiasm, "that method sounds like it would do the business in my warehouse."

"It will", Bourne declared. "The thing to do, is to try to get your whole community stirred up to action. Make it a wholesale slaughter of the disease-spreading pests."

"Are there any other methods of killing rats?" I asked.

"Certainly. Dozens of them. Trapping. Fumigating. Poisoning with a dozen poisoned baits. Rat hunts with dogs. All have been used. A good way is to make the buildings rat-proof. Another good way is to clean up all rubbish. Starve 'em out. But I wanted to emphasize the barium carbonate method to-day. That and the need for united community action in rat control."

"Where can we get further information on rats and rat control?" asked Smith.

"Write to the U. S. Department of Agriculture for the bulletin on the subject. Also send for circulars to your State Agricultural College. Your town or city board of health will have still further information on control methods. The important thing is to get the information and then get busy."

And with that ringing in our ears, we broke up the conference. But Smith and I decided to follow Bourne's advice and make a really fighting campaign against the rat peril on our own places and in our own communities.

---ooOoo---

R-A. B. 2/15/27.

ANNOUNCEMENT: Keep the dog and cat tied up or confined while the baits are exposed for the rats. Place the baits carefully and count them as they are placed.

That's a bit of advice that occurred to me in passing.

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

PROGRAM Autobiographies of Bugs and Rodents RELEASE Tues., Feb. 22.

NOT FOR PUBLICATION

ANNOUNCEMENT: Uncle Sam's insect pest chat this evening is on that most destructive and dangerous pest: - the European Corn Borer. The talk is released by the U.S. Department of Agriculture, through Station _____.

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Federal and State forces are mobilizing their strength for the 1927 offensive against the powerful battle lines of that most dangerous and destructive of corn insect pests, the European corn borer. Money, training, and men will be thrown into the war. At least 685 thousand dollars will be spent by Uncle Sam in the fight this year, and -- if a bill is finally passed -- 10 million dollars more will be appropriated by the government to put more power into the defending army's arms. All this in addition to large amounts being spent each year by States in which the borer has already appeared.

Strict quarantines have been laid against infested territory. Two and one-half million automobiles moving to points outside of quarantined areaswere examined in 1925.

A vast control offensive against the corn borer will be set in motion this year in the hope of cutting damage to a minimum. For the purpose of informing people of its seriousness, the U. S. Department of Agriculture has released two motion picture films dealing with borer damage and control. The press, the radio, the school, are taking up the fight. Farmers and townspeople are being warned daily against the spread of this pest. It looks like a big fight.

And it will take a big fight. The corn borer is a pest of prime importance. Since 1917 when the pestiferous importation was first seen in the United States, it has spread destruction over 93,000 square miles. A strong flier, it is extending its field of operations from 30 to 50 miles every year. Farmers in that section of the United States, where the borer is now established, know what it can do, and the infamous wrecker of corn fields is working its way toward the Corn Belt proper. Farmers there are considerably alarmed.

Investigators have found the borer in Kankakee County, Illinois, -- actually in the Corn Belt and special measures are now planned to protect that locality and also to prevent the spread of the corn scourge deeper into King Corn's country. Total extermination is out of the question, specialists in the Department of Agriculture say. Even the prevention of its natural spread is practically impossible. All that can be done is to control the pest as best money and energy can. Large-scale control measures, that are going to be put into operation with the opening of this crop season, should help to cut down borer damage.

Other corn insect pests are often mistaken for the European corn borer, but none is equally serious. The corn earworm, the stalk-borer, smartweed borer, the lined stalk-borer, the large corn stalk-borer resemble the European corn borer in many ways. In fact, it takes a trained entomologist to tell some of these insect pests apart. The corn borer feeds on ear, kernel, stalk and leaf. About the only thing it does not feed on is the fibrous root of the corn. Corn is not the only crop attacked. Aster, barley, celery, beets, broom corn, beans, chrysanthemum, cotton, cowpea, dahlia, gladiolus, hemp, hops, sunflower, potato and more than a dozen other important vegetable, grain, and flower crops are also fed upon by the corn borer in season.

The larvae, or young borers, working in the corn ears and stalks are guilty of most damage to corn. They tunnel into the tassel, the midrib of the leaf, the brace roots, the stubble. One of the surest signs of borer infestation in a corn field is broken and falling corn tassels. All parts of the plant -- except the fibrous roots, but including the corn in the ear -- are heavily damaged.

The borer passes the winter as a full-grown larva or borer, within the tunnel made in its host or shelter plant, during the previous summer and fall. Small holes in the surface of infested plants, together with masses of powder- or sawdust-like frass sticking onto the plants near or over the holes, indicate the presence of the insect. At this time the borer is nearly an inch long and one-eighth of an inch thick. The head is dark-brown or black.

When warm weather begins, in April or May, the borers resume business on the old stand. About the middle of May, a small hole is cut from the tunnel to allow the moth to escape. The hole is closed over with a thin partition of silk and the borer then spins a cocoon and goes into the pupa or resting stage. After remaining in the pupa stage about 19 days --- or until about the first week in June --- the skin of the pupa splits and the fully-developed adult or moth emerges into the light of the June day.

The female has a wing expanse of a little more than an inch and is strong and robust. It varies in color from pale yellow to light brown. The male is more slender, has a smaller wing expanse, and is generally darker than the female. The moths soon mate and egg-laying is begun. A single female will lay from 350 to 1192 eggs in a season.

Eggs hatch in from 4 to 12 days. The newly-hatched borer bores into the plant and completes most of its growth inside.

Briefly, that's the life-history of the European corn borer,

Farmers seldom see the parent moth. It hides during the day under leaves, in plant rubbish, and such places -- flying in the early morning and at night. The damage the borer does is not hidden however.

No close search is required to discover that.

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ANNOUNCEMENT: In a later talk for the corn belt we shall outline methods of corn borer control and tell you exactly what the various States -- in cooperation with the U.S.Department of Agriculture -- are going to do during 1927 to check the spread in the United States of this infamous pest.